CLAIMS

1. A method for mobile communications, comprising:

linking together a network of wireless local area network (WLAN) access points at respective physical locations;

assigning to the access points respective logical identities defining channels for use by mobile stations in a vicinity of the network in communicating over the air with the access points; and

altering the logical identities assigned to one or more of the access points by conveying a signal over the network.

2. A method according to claim 1, wherein altering the logical identities comprises altering the identities while the mobile stations are in communication with the access points, substantially without interrupting the communication.

3. A method according to claim 1, wherein communicating over the air with the access points comprises conveying at least one of circuit-switched voice communications and data communications.

4. A method according to claim 1, wherein altering the logical identities comprises transferring the identities among the access points responsive to movement of the mobile stations in the vicinity of the network.

5. A method according to claim 4, wherein transferring the identities comprises transferring one of the identities from a first one of the access points to a second one of the access points adjacent to the first one, responsive to the movement of one of the mobile

stations away from the first one of the access points and toward the second one.

6. A method according to claim 4, wherein transferring the identities comprises assigning a plurality of the identities to each of one or more of the access points so as to increase availability of the channels in an area of the network into which a number of the mobile stations have moved.

7. A method according to claim 1, wherein assigning the logical identities comprises assigning a common one of the identities to a plurality of the access points whose respective physical locations are outside a transmission range of one another.

8. A method according to claim 1, wherein assigning the logical identities comprises assigning a common one of the identities to a plurality of the access points whose respective transmission ranges are mutually overlapping.

9. A method according to claim 1, wherein conveying the signals comprises reprogramming a programmable identity module in the access points.

10. A method according to claim 1, wherein linking together the network of access points comprises linking the access points to a central control unit, and wherein altering the logical identities comprises conveying signals over the network from the central control unit to the access points.

11. A method according to claim 10, wherein conveying the signals comprises multiplexing the signals at the central control unit responsive to the logical identities, and switching the multiplexed signals in the

network to the access points for demultiplexing and transmission over the air.

12. A method according to claim 11, wherein switching the modulated signals comprises parallel switching of baseband signals generated at the central control unit.

13. A method according to claim 11, wherein switching the modulated signals comprises switching modulated radio frequency (RF) signals generated at the central control unit.

14. A method according to claim 11, wherein switching the modulated signals comprises switching modulated intermediate frequency (IF) signals generated at the central control unit.

15. A method according to claim 1, wherein defining the channels comprises determining an air interface pattern for use in communicating over the air, dependent upon the logical identities.

16. A method according to claim 15, wherein determining the air interface pattern comprises determining a pattern for frequency hopping.

17. A method according to claim 15, wherein determining the air interface pattern comprises determining a pattern for direct sequence spread spectrum transmission.

18. A method according to claim 15, wherein determining the air interface pattern comprises setting an initial air interface pattern in accordance with a first wireless network technology, and wherein altering the logical identities comprises applying a subsequent air interface pattern in accordance with a second, different wireless network technology.

19. A method according to claim 1, wherein altering the logical identities comprises transferring the identities among the access points responsive to a predetermined plan.

20. Apparatus for mobile communications, comprising:

a plurality of wireless local area network (WLAN) access points at respective physical locations, linked together in a network, and having respective logical identities assigned thereto, the logical identities defining channels for use by mobile stations in a vicinity of the network in communicating over the air with the access points; and

a control unit, which is coupled to convey signals over transport links in the network so as to alter the logical identities assigned to one or more of the access points.

21. Apparatus according to claim 20, wherein responsive to the signals, the access points are adapted to alter their logical identities while the mobile stations are in communication with the access points, substantially without interrupting the communication.

22. Apparatus according to claim 20, wherein the access points are configured to exchange at least one of circuit-switched voice communications and data communications over the air with the mobile stations.

23. Apparatus according to claim 20, wherein the control unit is adapted to alter the logical identities by transferring the identities among the access points responsive to movement of the mobile stations in the vicinity of the network.

24. Apparatus according to claim 23, wherein the control unit is adapted to transfer one of the identities from a first one of the access points to a second one of the access points adjacent to the first one, responsive to the movement of one of the mobile stations away from the first one of the access points and toward the second one.

25. Apparatus according to claim 23, wherein the control unit is adapted to reassign a plurality of the identities to each of one or more of the access points so as to increase availability of the channels in an area of the network into which a number of the mobile stations have moved.

26. Apparatus according to claim 20, wherein the control unit is adapted to alter the logical identities by transferring the identities among the access points responsive to a predetermined plan.

27. Apparatus according to claim 20, wherein the control unit is adapted to assign a common one of the identities to a plurality of the access points whose respective physical locations are outside a transmission range of one another.

28. Apparatus according to claim 20, wherein the access points comprise programmable identity modules, and wherein the control unit is adapted to generate the signals so as to cause the programmable identity modules to be reprogrammed with the altered logical identities.

29. Apparatus according to claim 20, wherein the central control unit comprises:

a plurality of signal modulators, which are adapted to modulate the signals to be conveyed over the network responsive to the logical identities; and

switching circuitry, coupled to route the modulated signals via the network to the access points for transmission over the air.

30. Apparatus according to claim 29, wherein the modulated signals comprise baseband signals.

31. Apparatus according to claim 29, wherein the modulated signals comprise radio frequency (RF) signals.

32. Apparatus according to claim 29, wherein the modulated signals comprise intermediate frequency (IF) signals.

33. Apparatus according to claim 20, wherein the channels have respective air interface patterns for use in communicating over the air, dependent upon the logical identities.

34. Apparatus according to claim 33, wherein the air interface patterns comprise patterns for frequency hopping.

35. Apparatus according to claim 33, wherein the air interface patterns comprise patterns for direct sequence spread spectrum transmission.

36. Apparatus according to claim 33, wherein at least one of the air interface patterns is set initially in accordance with a first wireless network technology, and wherein the control unit is adapted to alter the logical identities so as to redefine the at least one of the air interface patterns in accordance with a second, different wireless network technology.

37. Apparatus for mobile communications, comprising:

a plurality of wireless local area network (WLAN) access points at respective physical locations, linked together in a network, each of the access points comprising:

a baseband processing module for generating modulated baseband signals, the baseband processing module having a respective logical identity programmably assigned thereto, the logical identity defining a pattern of modulation of the baseband signals for use in communicating with mobile stations in a vicinity of the network; and

a radio module, coupled to the baseband processing module and adapted to convert the baseband signals to radio frequency (RF) signals for transmission over the air to the mobile stations; and

a control unit, which is coupled to convey signals over the network so as to reprogram the logical identity of the baseband processing module, thereby changing the pattern of modulation.

38. Apparatus according to claim 37, wherein the pattern of modulation comprises a frequency hopping pattern used in transmission of the RF signals between the radio module and the mobile stations.

39. Apparatus for mobile communications, comprising:

a plurality of wireless local area network (WLAN) access points at respective physical locations, linked together in a network, and adapted to transmit radio frequency (RF) signals over the air to mobile stations in a vicinity of the network; and

a control unit, comprising:

a plurality of baseband processing modules for generating modulated baseband signals, the baseband processing modules having respective logical identities defining channels for use in communicating over the air with the mobile stations; and

switching circuitry, adapted to couple the baseband processing modules to the access points so that the access points transmit the RF signals on respective ones of the channels assigned by the switching circuitry.

40. Apparatus according to claim 39, wherein the switching circuitry is adapted to alter the channels assigned to the access points while the mobile stations are in communication with the access points, substantially without interrupting the communication.

41. Apparatus according to claim 39, wherein the wireless access points comprise radio modules, which are coupled to receive the baseband signals generated by the baseband processing modules and to generate the RF signals responsive thereto.

42. Apparatus according to claim 39, wherein the control unit further comprises a plurality of radio modules coupled to the baseband processing modules so as to generate the RF signals responsive to the baseband signals, and wherein the switching circuitry comprises RF switching circuitry, which is adapted to convey the RF signals to the access points for transmission.

43. Apparatus according to claim 39, wherein at least one of the access points comprises a plurality of

antennas, and wherein the switching circuitry is adapted to couple the baseband processing modules to the at least one of the access points so that each of the plurality of the antennas transmits the RF signals over the air on a respective one of the channels.